Insights from behavioural economics for ecosystem services valuation and ecosystem sustainability

This review examined evidence from behavioural economics literature to understand how cognitive factors, such as the way questions are framed and the settings in which they are posed, influences the values people place upon ecosystem services and ecosystem sustainability. Accumulating evidence shows cognitive factors can have an important influence. A variety of methods are proposed to reduce their impact, although further work is required to provide evidence of the extent to which these are effective.

'Ecosystem services are broadly defined as the benefits humans obtain from ecosystems. Failure to account for their value to society in making decisions is a primary driver of environmental degradation'

Background

Economic valuation of ecosystem services provides information fundamental to the efficient management of natural resources and ecosystems. Valuation of ecosystem services for which no market currently exists can be based upon a variety of non-market methods. However, the traditional economic theory upon which such methods are based has increasingly been shown to be inadequate. Behavioural economics draws insights from psychology and experimental research. It aims to provide a more accurate and relevant account of economic behaviour by taking account of social, cognitive and ethical factors influencing decisions. Although previous reviews have explored evidence on the values of ecosystem services provided by woodlands, there has been less focus on how cognitive factors can influence these values.

Objectives

This review aimed to collate evidence to consider how cognitive factors can affect preferences and values people express for ecosystem services and ecosystem sustainability, and to reflect upon the implications for future valuation work.

Methods

A broad literature search on ecosystem value or valuation, combined with a range of terms used in behavioural economics, was used to identify evidence published between 2001 and 2012. To help structure the evidence a typology of six main categories of impact was developed.

Findings

Several strands of cognitive influences affecting people's valuations of ecosystem services were identified, however the evidence of these influences is relatively limited. Accumulating evidence shows that the values placed on ecosystem services vary depending on how questions are framed, the setting in which questions are posed and a range of other factors. The impact of some of these influences can be relatively large. This has implications for gauging the robustness of existing estimates of the value of woodland ecosystem services and their usefulness for policy purposes. It should also be considered in the design of future research to elicit values for the ecosystem services woodland and other habitats provide.

Some of the largest cognitive influences on the valuation of ecosystem services are associated with: (1) the way people process information e.g. it has been found flagship species are valued more highly because they are more familiar or conspicuous than others; (2) how information is presented e.g. textual information was found to produce higher valuations than presenting the same information in tabular format; (3) the context in which values are elicited e.g. surveys of groups have been found to increase valuations compared to surveys of individuals; (4) learning e.g. discussions with friends or family was found to increase values; (5) lexiographic preferences e.g. 'protest' answers where a zero or no value is given because the respondent doesn't think the good should be valued.

Recommendations

Willingness to pay (WTP) responses may provide underestimates and willingness to accept (WTA) responses can provide a better guide for conserving ecosystems. As strong beliefs can result in either a refusal to provide a value for a particular ecosystem service or a refusal to consider trade-offs between services, studies that focus on a basket of ecosystem services and substitution between them need to take account of the potential for such responses. As valuation can be complicated by protest answers, where a zero or no vote is given, consider using a follow-up question to determine why respondents have indicated a particular value.

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Reports and Publications: Moseley, D. & Valatin, G. (2013). Insights from behavioural valuation and sustainability. www.forestry.gov.uk/pdf/FCRP022.pdf/$FILE/FCRP022.pdf